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The form of the cranium No. 8 is moreover not so symmetrical as stated by M. Broca. We should be very cautious in appreciating deformations of unknown individuals. A partial hypertrophy of the brain cysts, consecutive to meningeal hemorrhages, hydatids, etc., may produce deformations tending to lead us into error.

M. Broca said that he agreed with M. Giraudeau that apparently slight causes, whose action is continuous, may in time produce considerable deformations; but in the particular case of the crania of Orrouy, the super-mastoidian flattening cannot be considered as pathological; first, because it exists symmetrically on both sides, and specially because it is found in a large portion of the crania of this series.

[*To be continued.*]

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#### ANTHROPOLOGY AT THE BRITISH ASSOCIATION.

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WE understand that the President of the Anthropological Society of London has received a large number of congratulations from anthropologists, both in this country and especially from abroad, at the recent recognition of the science of anthropology by the British Association. We feel it our duty to join in their chorus of congratulation, more however from sympathy than from a belief that the present position of the science of man in the Association is satisfactorily or finally settled. The anthropologists have won a great and decided victory. Under such circumstances, it behoves them to be contented at least for a time. There is a very general feeling that things will soon right themselves. The first great step has now been gained, and we venture to assert without fear of contradiction that the real genuine scientific work done in the department of anthropology was not surpassed by any of the sections during the past meeting of the Association. This must be highly satisfactory both to anthropologists and to those of the authorities of the Association who were instrumental in bringing about the recognition of the science of man as a special branch of science.

The Nottingham meeting of the Association was on the whole a decided success. There was an earnestness about the whole proceedings which could not fail to do good to the cause of science. The admirable address of the President, Mr. W. R. Grove, was something which at once gave a tone to the meeting. It will long be remem-

bered as one of the addresses which really helped to advance the cause of science. We could wish that the authorities of the Association would bear this object more continually in mind. We fear that this is sometimes forgotten by them. It is not our duty or business, however, on this occasion to dwell on the general management of the Association. Our duty will be best discharged if we give a short account of what was done to advance anthropology by the Association.

We shall commence by giving a few extracts from Mr. Grove's address, and then give a summary of the work done in the Department of Anthropology. On future occasions, we may print some of these communications at length.

"But there is another difficulty in the way of tracing a given organism to its parent form, which, from our conventional mode of tracing genealogies, is never looked upon in its proper light.

"Where are we to look for the remote ancestor of a given form? Each of us, supposing none of our progenitors to have intermarried with relatives, would have had at or about the period of the Norman Conquest upwards of a hundred million direct ancestors of that generation, and if we add the intermediate ancestors, double that number. As each individual has a male and female parent, we have only to multiply by two for each thirty years, the average duration of a generation, and it will give the above result.

"Let anyone assume that one of his ancestors at the time of the Norman Conquest was a Moor, another a Celt, and a third a Laplander, and that these three were preserved while all the others were lost, he would never recognise either of them as his ancestor; he would only have the one-hundred millionth of the blood of each of them, and as far as they were concerned there would be no perceptible sign of identity of race.

"But the problem is more complex than that which I have stated; at the time of the Conquest there were hardly a hundred million people in Europe, it follows that a great number of the ancestors of the *propositus* must have intermarried with relations, and then the pedigree, going back to the time of the Conquest, instead of being represented by diverging lines, would form a network so tangled that no skill could unravel it; the law of probabilities would indicate that any two people in the same country, taken at hazard, would not have many generations to go back before they would find a common ancestor, who probably, could they have seen him or her in the life, had no traceable resemblance to either of them. Thus two animals of a very different form, and of what would be termed very different species, might have a common geological ancestor, and yet the skill of no comparative anatomist could trace the descent.

"From the long continued conventional habit of tracing pedigrees through the male ancestor, we forget in talking of progenitors that each individual has a mother as well as a father; and there is no reason to suppose that he has in him less of the blood of the one than of the other.

"The recent discoveries in palæontology show us that man existed on this planet at an epoch far anterior to that commonly assigned to him. The instruments connected with human remains, and indisputably the work of human hands, show that to these remote periods the term civilisation could hardly be applied—chipped flints of the rudest construction, probably, in the earlier cases, fabricated by holding an amorphous flint in the hand and chipping off portions of it by striking it against a larger stone or rock; then, as time suggested improvements, it would be more carefully shaped, and another stone used as a tool; then (at what interval we can hardly guess) it would be ground, then roughly polished, and so on,—subsequently bronze weapons, and, nearly the last before we come to historical periods, iron. Such an apparently simple invention as a wheel must, in all probability, have been far subsequent to the rude hunting-tools or weapons of war to which I have alluded.

"A little step-by-step reasoning will convince the unprejudiced that what we call civilisation must have been a gradual process; can it be supposed that the inhabitants of Central America or of Egypt suddenly and what is called instinctively built their cities, carved and ornamented their monuments? if not, if they must have learned to construct such erections, did it not take time to acquire such learning, to invent tools as occasion required, contrivances to raise weights, rules or laws by which men acted in concert to effect the design? Did not all this require time? and if, as the evidence of historical times shows, invention marches with a geometrical progression, how slow must have been the earlier steps! If even now habit, and prejudice resulting therefrom, vested interests, etc., retard for some time the general application of a new invention, what must have been the degree of retardation among the comparatively uneducated beings which then existed?

"The doctrine of continuity is not solely applicable to physical inquiries. The same modes of thought which lead us to see continuity in the field of the microscope as in the universe, in infinity downwards as in infinity upwards, will lead us to see it in the history of our own race; the revolutionary ideas of the so-called natural rights of man, and *à priori* reasoning from what are termed first principles, are far more unsound and give us far less ground for improvement of the race than the study of the gradual progressive changes arising from changed circumstances, changed wants, changed habits. Our language, our social institutions, our laws, the constitution of which we are proud, are the growth of time, the product of slow adaptations, resulting from continuous struggles. Happily in this country, though our philosophical writers do not always recognise it, practical experience has taught us to improve rather than to remodel; we follow the law of nature and avoid cataclysms.

"The superiority of man over other animals inhabiting this planet, of civilised over savage man, and of the more civilised over the less civilised, is proportioned to the extent which his thought can grasp of the past and of the future. His memory reaches further back, his capability of prediction reaches further forward in proportion as his

knowledge increases. He has not only personal memory which brings to his mind at will the events of his individual life,—he has history, the memory of the race; he has geology, the history of the planet; he has astronomy, the geology of other worlds. Whence does the conviction to which I have alluded, that each material form bears in itself the records of its past history, arise? Is it not from the belief in continuity? Does not the worn hollow on the rock record the action of the tide, its stratified layers the slow deposition by which it was formed, the organic remains imbedded in it the beings living at the times these layers were deposited, so that from a fragment of stone we can get the history of a period myriads of years ago? From a fragment of bronze we may get the history of our race at a period antecedent to tradition. As science advances, our power of reading this history improves and is extended. Saturn's ring may help us to a knowledge of how our solar system developed itself, for it as surely contains that history as the rock contains the record of its own formation.

“By this patient investigation how much have we already learned, which the most civilised of ancient human races ignored! While in ethics, in politics, in poetry, in sculpture, in painting, we have scarcely, if at all, advanced beyond the highest intellects of ancient Greece or Italy, how great are the steps we have made in physical science and its applications!

“But how much more may we not expect to know!”

In the department of Anthropology, Mr. A. R. Wallace, President, The PRESIDENT congratulated the audience on the inauguration of a department in which all students of man, by whatever name they might call themselves, could meet harmoniously to state their views and opinions, with the sole object of eliminating truth. Anthropology the President defined as the science which contemplates man under all his varied aspects—as an animal and as a moral and intellectual being, in his relations to lower organisms, to his fellow man, and to the universe. The anthropologist sought to collect together and systematise the facts and the laws which had been brought to light by all those branches of study which, directly or indirectly, had man for their object.

The comparative anatomist and the zoologist compare his structure with that of other animals, take note of their likenesses and differences, determine their degrees of affinity, and seek after the common plan of their organisation and the law of their development. The psychologist studies the mind of man, its mode of action and development, compares it with the instincts and the reasoning faculties of the lower animals, and ever aims at the solution of the greatest of problems—whence and what is mind.

The historian collects and arranges the facts of man's progress in recent times. The geographer determines the localities of the various races that now inhabit the earth, their manners, customs, and physical characteristics. The archæologist seeks, by studying the remains of man and his works, to supplement written history, and to carry back our knowledge of man's physical, mental, and moral con-

dition, into *pre-historic times*. The geologist extends this kind of knowledge to a still earlier epoch, by proving that man co-existed with numerous animals now extinct, and inhabited Europe at so remote a period that the very contour of its surface, the form of its hills and valleys, no less than its climate, vegetation and geology, were materially different from what they now are, or ever have been during the epoch of authentic history.

The philologist devotes himself to the study of human speech, and through it seeks to trace out the chief migrations of nations, and the common origin of many of the races of mankind. And lastly, the phrenologist and craniologist have created special sciences out of the study of the human brain and skull. Considering the brain as the organ of the mind, the phrenologist seeks to discover in what way they correspond to each other, and to connect mental peculiarities with the form and dimensions of the brain as indicated by the corresponding form of its bony covering. The craniologist confining his attention to the skull as an indication of race, endeavours to trace out the affinities of modern and ancient races of men, by the various forms and dimensions of their crania.

These various studies have hitherto been pursued separately. There has been great division of labour, but no combination of results.

Now it is our object as anthropologists to accept the well ascertained conclusions which have been arrived at by the students of all these various sciences, to search after every new fact which may throw additional light upon any of them, and, as far as we are able, to combine and generalise the whole of the information thus obtained.

We cannot therefore afford to neglect any facts relating to man, however trivial, unmeaning or distasteful, some of them may appear to us. Each custom, superstition or belief of savage or of civilised man, may guide us towards an explanation of their origin in common tendencies of the human mind. Each peculiarity of form, colour, or constitution, may give us a clue to the affinities of an obscure race. The anthropologist must ever bear in mind, that as the object of his study is *man*, nothing pertaining to or characteristic of man can be unworthy of his attention.

It will be only after we have brought together and arranged all the facts and principles which have been established by the various special studies to which I have alluded, that we shall be in a condition to determine the particular lines of investigation most needed to complete our knowledge of man ; and may hope ultimately to arrive at some definite conclusions on the great problems which must interest us all—the questions of the origin, the nature, and the destiny of the human race.

I would beg to recollect also, that *here* we must treat all these problems as purely questions of science, to be decided solely by facts, and by legitimate deductions from facts. We can accept no conclusions as authoritative that have not been thus established. Our sole object is to find out for ourselves what is our true nature—to feel our way cautiously step by step into the dark and mysterious past of human history—to study man under every phase and aspect of his

present condition ; and from the knowledge thus gained to derive (as we cannot fail to do) some assistance in our attempts to govern and improve uncivilised tribes, some guidance in our own national and individual progress.

Dr. HUNT proposed a vote of thanks to the Chairman for his excellent address, remarking that the meeting would agree with him that it had only one fault—that of being too short.

Dr. FAIRBANK seconded the motion, which was carried amid applause.

Mr. C. CARTER BLAKE *On a Human Jaw from the Belgian Bone Caves*.—The jaw was discovered in the Trou de la Naulette, near Dinant, Belgium, by Dr. E. Dupont, acting under the orders of the Belgian government. It was found in undisturbed sandy clay (*lehm*) at a depth of  $3\frac{1}{2}$  metres (11 ft. 4 ins.), the clay alternating with stalagmite, and affording evidences of gradual deposition. The characters which it presented were very different to those exhibited by the jaws of the white races of the present day, and presented in many points an exaggeration of the characters of the lowest Australian jaws. In some respects it differed widely from the human jaws known to anatomists, and afforded great resemblance to the jaw of the young orang (*Simia morio*). Mr. Blake gave a careful comparison between this jaw and certain typical jaws selected from three thousand which he had examined, and summed up by expressing his belief that the jaw was of vast though unascertained antiquity, and that on the whole the jaw more closely resembled those of the Slavonic races than any other jaw, while in some points it presented an analogy to and exaggeration of the Australian.

The Rev. DUNBAR HEATH remarked on the uncertainty attending some of the discoveries of human remains, and on the greater apparent authenticity of the present “find.” He should like to know whether reindeer existed at that period, and why only one bone should be found so distinctly ape-like. Belgium was in the reindeer period inhabited by a Tartar race, but it seemed that at a vastly more remote period there were inhabitants of an ape-like character. He could only account for this on the theory of development.

Dr. B. DAVIS said, supposing it to be human, he was inclined to think that it can hardly be regarded as normal ; but, from the great thickness in the body of the jaw, a sort of shelf of bone inside, it is most likely pathological, *i. e.*, affected with osteosclerosis. He also confessed that he could not but admire the elaborate examination of the jaw given by Mr. Carter Blake.

After some remarks from Dr. HUNT, Mr. REDDIE, and Mr. J. GRATTAN,

The CHAIRMAN remarked that the bone was very interesting irrespective of its antiquity ; for, if a race having this peculiar formation were found to exist now, it would be just as much a link between man and the larger apes as if it existed many thousand years ago. The layers of stalagmite indicated great antiquity.

Mr. BLAKE, in reply to Dr. Davis, said he had never seen any pathological specimen showing the peculiarities of the jaw in question.

A similar jaw had been found at Arcis-sur-Aube in France. Some of the Slavonic races manifested an approach to this deviation from the general type.

Mr. W. J. BLACK *On Colonies in South Africa.*

Mr. WILKINSON *On the Races in Madagascar.*

The CHAIRMAN said it was a very remarkable thing that people with a Malayan element in the language should be found in the interior of Madagascar, the Malays being peculiarly a semi-marine people. It might be that a party landed on that island, and had to fight their way into the interior, becoming ultimately of sufficient strength to conquer the native inhabitants.

Mr. E. L. LAYARD said, that during a brief visit to Madagascar he saw no indications of Malayan origin.

Mr. CARTER BLAKE said, that the whole weight of the craniological evidence appeared to be directly against the hypothesis of the Malay descent of the inhabitants of Madagascar. The skulls of many Hovas were now in the Anthropological Gallery of the Paris Museum. These offered numerous and wide marks of distinction from the skulls of Malays. The limits of variation of Negro and Negroid types were not yet ascertained; but the truest affinities of the Hovas appeared to him to be with the natives of Eastern Africa.

Dr. BARNARD DAVIS regretted that he had but one skull, and that an imperfect one; still he considered the valuable evidence derived from the collection of Hovas skulls in Paris, given by Mr. Carter Blake, was conclusive as to their being of Negroid race. The assertion that the Hovas spoke a Malay tongue was not supported by the researches of Mr. Crawford, a high authority on these points, and who accounted in the most satisfactory manner for the few Malay words in the language—language itself being by no means a test of origin. All authentic figures of the people of Madagascar represent them with curly, crisp or woolly hair, never with *straight* hair like Malays, as had been asserted.

The CHAIRMAN thought the straight hair, complexion, and countenance of the Hovas were so distinct from the African type as to prove that they had Malayan blood. The proof was independent and corroborative of that afforded by their language.

Mr. JOHN GRATTAN *on a New Craniometer.*—The instrument is highly ingenious, though somewhat complicated, and possesses the merit of affording correct delineations of the skull as well as accurate measurement. It consists of two parts: first, a contrivance similar to that used for swinging the mariner's compass fastened vertically to a perpendicular brass rod fixed in a table of wood; second, on a moveable base another brass rod furnished with two arms of the same length, one curved for passing over the surface of the cranium, the other furnished with a pencil and fastened by means of a lever so as to move in a circle round the fixed point of the cranium.

The cranium to be measured is fixed by the auditory foramen, and the naso-frontal suture is taken as the centre from which to measure. Outlines of the skull may be taken in any direction with great rapidity and accuracy, and by an ingenious contrivance these may be so fixed



together as to give a very fair idea of the general form. One great advantage of this invention is that a correct representation of a skull may be sent to any part, and its relative proportions and angles ascertained in accordance with any scale which may be adopted.

The CHAIRMAN: Everyone must have been struck with the difficulty of taking accurate measurements of the skull—a difficulty which has been rendered all the more apparent by the variety of methods which have been proposed for overcoming it. This form of a skull should always be separated from its absolute bulk. By this invention the angular measurements, form, and also dimensions are all given and can readily be reduced to either the English or foreign standard.]

Professor G. BUSK, F.R.S., stated that he was in the habit of using an instrument which he considered preferable to the one exhibited as being more simple and less expensive. It was constructed on the principle of a common shoemaker's gauge, consisting of a straight stem about twelve inches long, having an arm jointed to it at one end, which can be opened out to an exact right angle, and a second arm which can be slid up and down the stem also at a right angle. These arms should be six inches long. The stem and arms are graduated in inches and tenths on one side, and centimetres and millimetres on the other. The auditory foramen is taken as the fixed point and a needle in a piece of cork fixed in each. To take the distance in radial measurement, the stem is placed upon the point which the radial line is to be measured, and the arms are brought down on each side over the needle in the auditory foramen and the degree pointed at, which will be the same on both sides if the instrument is held properly, will be the radius sought. For comparison, Professor Busk takes as a vertical line one drawn from the external auditory meatus to the junction of the coronal and sagittal sutures. This as an invariable standard was first suggested by l'Abbé Frère. As a horizontal or base line he used one crossing the vertical at right angles at the centre of the auditory meatus, coincident in most cases with the floor of the nostrils. The object of a drawing is to represent things as they are seen. A sketch may be mathematically correct, and yet not convey so good an idea as a perspective view would. It is not, however, easy to give accurate measurements in such a figure, and so he was in the habit of giving five different figures of the same skull by means of the camera lucida. Professor Busk was of opinion that the craniometer exhibited was too complicated and expensive for ordinary purposes.

Mr. WESLEY, F.A.S.L., said that other instruments less complicated, such as those used by M. Broca and Professor Huxley answered very well. He agreed with Professor Busk that perspective view conveys the best idea of the general appearance of the skull, but was of opinion that the invention exhibited was very useful for correct measurement.

Mr. CARTER BLAKE was of opinion that all angular measurements Mr. Grattan made could be correctly made with Professor Busk's instrument, and protested against the wish to reduce delineations of the skull to mathematical instead of perspective drawings.

Sir J. LUBBOCK thought that persons clever with the pencil might

be able to make a correct representation of the skull without the aid of such a contrivance as the one exhibited, but was of opinion that to workers not so gifted it would prove exceedingly valuable.

Mr. J. GRATTAN, in reply to the various speakers, stated that his object was not so much the production of a striking picture as the attainment of exact measurements; by which it is more easy to detect slight differences than by perspective drawings. In practice he found the *camera lucida* not to be depended upon, in fact the drawings obtained by it were of very little value.

The CHAIRMAN observed that the fact that others had endeavoured with more or less success to construct instruments for the same purposes, did not detract from the credit due to Mr. Grattan as the inventor of the one exhibited. He was of opinion that for rapidity and accuracy no instrument yet invented equalled that of Mr. Grattan's, and that the question of price ought not to be taken as an objection where accuracy was desired.

Mr. E. B. TYLOR on *Phenomena of the Higher Civilisation traceable to a rudimentary origin among Savage Tribes*.—After remarking that it was important to us to study the habits of the lower races, he said the stories of uncivilised races about their gods and heroes, cosmogonies, transformations, and origins, show us the mythologic stage underlies the poetry and religion of the Greeks and other nations, from among whom the highest modern civilisation has grown. The New Zealand myths held that we have had two primæval ancestors, a father and a mother, Rangi and Papa, heaven and earth. The earth, out of which all things are produced is our mother; the protecting and over-ruling heaven is our father. There he explained were the record of events. After a lengthy reference to the habits, literature, and especially to the fasting and worship of tribes. In conclusion he referred to primitive marriages as connected with the development of races from savage to civilised life, through the different stages of exogamy or the law of marriage out one's tribe. He believed one of the services of savage tribes was to enable civilised men to understand their position in the world.

Rev. DUNBAR I. HEATH was of opinion that the paper should have been styled "The Origin of Existing Errors in the Mythology of Savage Tribes." Mythology is a rude attempt to account for the phenomena of nature just as physiology is an attempt to explain the facts in natural history. The savage owing to the narrow limits of his observation takes erroneous views of natural phenomena as we now see was the case with ourselves when our knowledge was more imperfect. In the same manner that we used to speak of the "principle" of things, as of the wind, etc., etc. So the savage used the term "god."

Sir J. LUBBOCK also was of opinion that the evidence brought forward was, more correctly speaking, a relic of lower civilisations than a proof of the origin of those which now exist. Archæologists are now of opinion that to arrive at a correct conception of antiquity, relics should be compared with objects used for similar purposes by existing savage tribes. In reference to the custom of destroying, as by fire, objects to be buried with the dead, which exists among

savage tribes, he pointed out what he believed to be misconceptions of motive.

1. When implements have been found burnt it has been supposed that it was intended as a protection against robbery. He believed that the real reason was that the savage had endeavoured in this manner to make them useful to the departed by killing them, so that the spirit of the one might go to the spirit of the other.

II. The curious custom of making things in resemblance of an enemy, observed in savage tribes, has led to the opinion that these implements might have been burnt with some idea of thereby injuring the departed. This he did not believe.

Mr. GEORGE DAWSON was of opinion that a great amount of knowledge might be attained by the study of savage tribes. There was nothing of novelty in the paper, as the subject had been treated of by authors from Lord Bacon downwards; indeed, a valuable literature exists.

Mr. REDDIE considered it doubtful whether savages understood the meaning of their customs and traditions. He believed they did not.

Mr. CARTER BLAKE wished to know, taking all the races of men, where the author would draw the line of distinction between civilised and savage? And supposing the traditions of the Semitic nations resembled those of certain savage tribes, was the same law of evolution applicable to both?

Mr. TYLOR, in reply, said: The question arises whether the title should contain a paper, or merely indicate the line of thought pursued? He was of the latter opinion. Perhaps a better title for the paper would have been: "Phenomena in the higher civilisations traceable in origin to the myths of the lower." He agreed with Sir J. Lubbock as to the motive savages had in burying implements with the dead. Though he believed that in most instances the object they had in burning them was to send their souls to the departed, and not to protect them from robbery, yet cases were on record in which there could be no doubt that this was likewise the intention. For instance, the Dyaks of Borneo did not originally destroy them, but when they found that the Malays rifled the graves, they then adopted the custom. He believed that whether destroyed or not, the object in placing them there was the same. In reference to the literature of the subject of the paper, he pointed out the difference between vague general remarks, and generalisations the result of careful study and research. It had been asked whether savages understood the meaning of their traditions? Some do—the New Zealanders, for instance, who believe that Rangī and Papa are the parents of everything, when asked who they each are, will point to heaven, and say, "That is Rangī," and to the earth, and say, "That is Papa."

Dr. HUNT, "*On the Principle of Natural Selection applied to Anthropology, in reply to views propounded by some of Mr. Darwin's Disciples.*"—[See page 320 of the *Anthropological Review*.]

Mr. REDDIE was of opinion that in the present state of our knowledge we had better take our stand as earnest and patient inquirers than as the supporters of theories. He thought that Psychology was

a better test of the difference between man and the apes than anatomy ; that in intellect there was a far greater difference between the lowest man and the highest ape than between the highest type of man and the lowest. He considered that we have a case of change in type taking place before our eyes in the case of the North American. Although sufficient time has not yet elapsed to produce a unity in type among modern Americans, a slight change is produced in the same direction in each of the many nationalities represented among the immigrants. The individuals to be acted upon vary so much in the first instance, that a long time must elapse before a complete unity of type is produced, but sufficient change is observed to show what may be expected. Not sufficient attention has been paid to the fact that the same change of type is observed in those who have gone to live in America as in those born there. It would be interesting to know whether light and dark races are equally affected in this change. We are apt to confine our attention to the consideration of peoples now extinct, to the neglect of people now living. America is worthy of more attention than has been given to it. In Africa there is a great difference between the tribes. Are they distinct peoples? He believed they are not. Messrs. Baker and Beke believe that the African races are getting lower and lower, and he was of the same opinion. In the Irish, also, degradation is observed. When types become fixed, a great length of time would be required to change them. At first the modification might be rapid, but would probably afterwards proceed very slowly. He was strongly of opinion that the theory of unity of origin is more logical than the opposite one of diversity.

Dr. GRIERSON referred to the Book of Genesis, but was informed by the Chairman that it was not considered an authority in matters of science. As instances of change in type he mentioned the various breeds of dogs and pigeons, and was of opinion that the existing differences between the various divisions of the human race were not so great as those which we know have taken place in dogs and pigeons.

Rev. DUNBAR I. HEATH could not believe without evidence that the Newfoundland dog, which was unknown till the discovery of that island, was sprung from the same stock as the greyhound, figures of which are found on many ancient monuments. It should be remembered that the author had not stated that the various existing races of man were sprung from any at present in existence.

Professor BUSK objected to the manner in which the subject had been brought before the meeting. It should stand on its own merits, and not on authority. The opinions quoted were of very different value, and yet they were mixed together as though they were of the same. The theory brought forward by Mr. Darwin and advocated by Mr. Huxley, appears the only one yet advanced that will satisfactorily account for existing differences.

Mr. CARTER BLAKE, when recently engaged on the continent in the examination of evidence of man's early existence, was sorry to find that English anthropologists were thought to have settled down con-

tented with the Darwinian hypothesis. The only evidence brought forward by the disciples of Mr. Darwin applicable to the genesis of man were the Neanderthal skull and the jaw from Moulin-Quignon. The Neander skull was proved to be a curious pathological specimen, and the Moulin-Quignon jaw could not be accepted as authentic. There is no evidence whatever that ancient peoples approached the characters of the ape more than those which now exist. The lowest races—as, for instance, the Australian—possess characters far more Simian than any ancient remains yet brought forward by the disciples of Mr. Darwin. The differences observed in the various races, if not *ab origine*, must result from some continuously active, operative law, but that is not necessarily the same as the theory of natural selection. He was not prepared to accept Mr. Darwin's hypothesis as a ruling guide.

Professor BUSK did not agree with Mr. Carter Blake in his opinion on the jaw from Moulin-Quignon.

Mr. D. W. NASH wished to ask two questions: first, is it necessary, in starting a discussion on the origin of man, to assume either unity or diversity? Second, if such is the case, which opinion was the most philosophical? As “unity of force” is becoming the generally received opinion, from being the more philosophical, so in anthropology the tendency of opinion will be towards unity of origin. The object of the paper was to inquire whether Mr. Darwin's hypothesis had been properly applied, and not to discuss the origin of man.

Mr. WALLACE said that the object of the paper was to consider the use which had been made of Mr. Darwin's theory by some of his followers, and not to discuss the question of monogeny or polygeny. Darwin's theory, as far as it goes, may be considered as nearly proved as any theory can be. He never drew any proof from man, but that is no reason why the theory should not be applied to the human race. The chief points in Mr. Darwin's theory are: first, that certain species, if allowed to grow without restriction, would each of them soon fill the earth; second, that a struggle for existence takes place, that the stronger individuals live, and the weaker die out. If the theory be true of plants and the lower animals, it must be true of man also. Professor Vogt, though a follower of Mr. Darwin, does not believe that it necessarily follows that man must have sprung from one and the same origin. According to this theory—in which he did not believe—the various races of man may have sprung from different animals. He (Mr. Wallace) was of opinion that similarity in the mental characters of the different races, was far greater than their dissimilarity; that language, which can be acquired by every race, is a proof of mental unity. It is a mistake to imagine that Mr. Darwin considers climate the cause of the changes which he points out. It is doubtful whether all dogs have sprung from the same stock, but with pigeons there is no doubt that they have. In them, alterations of the skull are produced perfectly independent of changes of climate. He was of opinion that it is quite logical to believe that races have diverged from a common stock, and that they are now gradually again approaching each other. Different races are found in different

climates, because others could not live there. The type of any particular race was the cause of the selection of the locality in which it is found, and was not caused by the conditions under which the people live. The statement that man is becoming more homogeneous is quite correct. The weakest always goes to the wall, and as the most powerful races increase they will drive the weaker off the face of the earth. Why else do the New Zealanders die?

Mr. REDDIE: This argument will not apply to the case of Europeans going to India and to Africa, though it may in the case of New Zealand and elsewhere.

Mr. WALLACE: Those races which are best adapted for residence in a country will drive out the natives if they are weaker and less able to resist.

Dr. HUNT, in reply, said that he should be sorry to think that the audience did not understand the object of his paper better than some of the speakers appeared to do. He simply spoke of the application which had been made of a certain theory, and did not enter into the question of monogeny or polygeny. He wished people to keep their minds open on the question of the unity or diversity of origin of man; he believed it had been discussed much before the proper time. He strongly objected to the notion that in the present state of knowledge Darwin's theory must be accepted. At present we know absolutely nothing, and are not in a position to offer an opinion as to its correctness or otherwise. We have nothing to do with the question, "which is the most philosophical assumption?" Why should we give preference to one ape rather than to another? The Chairman had expressed an opinion that, because some races are dying out, therefore there must be a coming unity. But if Mr. Darwin's theory were true, there would be a constant tendency to diversity, and fresh races would constantly spring up. Though the standard of the new races might be higher and the physical differences less marked, yet intellectually they would become wider apart. He wished particularly to impress on the meeting, that in the present state of our knowledge, we are not in a position to offer any opinion as to the origin of man or his position in nature.

Dr. JOHN BEDDOE, *On the Stature and Bulk of the Irish, and on the Degeneration of Race.*

Mr. C. C. BLAKE, *On Skulls from Round Barrows in Dorsetshire.*—Mr. C. C. Blake remarked that they were obtained by Dr. Hunt, the President of the Anthropological Society, from some barrows near Blandford. Dr. Thurnam, in a dissertation on the two principal forms of English and Gaulish skulls, gave a table containing the measurement of twenty-five skulls from the English round barrows. The longest of those exhibited a cephalic index of  $\cdot 74$ , and the shortest  $\cdot 87$ , the average being  $\cdot 81$ ; and Dr. Thurnam therefore concluded that the typical character of the skulls found in round barrows was that which presented the brachycephalic type. When the skulls taken from the Blandford barrow were carefully measured, it appeared that the rate of breadth was much smaller than the average of those measured by Dr. Thurnam. Where Dr. Thurnam's lowest breadth was  $\cdot 74$ , the

lowest of the Blandford skulls was '66; and where his highest was '87, the highest of those from Blandford was '81, the average being in each case respectively '81 and '73. If the Blandford skulls (nine in number) were added to Dr. Thurnam's table of twenty-five, the average of the whole thirty-four would be found to be '77. The distinction between an average of '81 and '77 must strike all observers, and some might consider the deduction of four per cent as invalidating many of the general conclusions arrived at by Dr. Thurnam. If Mr. Blake were inclined to base any conclusions on his measurements, he might reverse Dr. Thurnam's "sort of axiom", and say "long barrows, long skulls; round barrows, long skulls too, and sometimes longer". A description of the skull would follow at another time, and the conclusions he would draw at present were as follow:—1st. That the state of materials at disposal precluded any generalisation as to the prevalence of a brachycephalic type of the skull in the round barrows of the south of England. 2nd. That a much larger series of skulls from the round, as well as from the long barrows, must be measured before any conclusion could be arrived at as to the *cranial modulus*.

Dr. HUNT said there had been a large number of round barrows opened in Dorsetshire, and a good many urns had been found, but anthropology was in such a state that it had not been thought worth while to take care of the skulls. He met with a gentleman who was in possession of some skulls, and prevailed upon him to part with them for the Anthropological Society. The subject of the connection of the classes of people to whom they owed the round and long barrows found all over Europe had excited great interest. He thought the theory of Dr. Thurnam, that in round barrows there were round skulls, and long skulls in long barrows, was prematurely advanced. The opinion of Dr. Barnard Davis was that a long and a round-headed people inhabited this country at the same time.

Mr. SEBASTIAN EVANS observed that Dr. Thurnam's axiom was so convenient a formula that it would be a pity to give it up until it had been clearly demonstrated to be erroneous, and this he thought had not yet been done. With one of the skulls exhibited were found some iron and Roman implements, and several of the other skulls were so similar, that there could be no reasonable doubt about their belonging to individuals of the same race. In all probability, therefore, the skulls exhibited were of a comparatively later date, well within the limits of the iron age. The round barrows and short skulls described by Dr. Thurnam, and on which he founded his hypothesis, belonged, he (Mr. Evans) believed, entirely to an earlier period, the bronze age. It was, therefore, still possible that Dr. Thurnam's theory might be true to this extent: that the long barrows were raised by a long-headed race; the earlier round barrows by a short-headed race; and the later round barrows by a third intrusive long-headed race, who might not impossibly be hereafter identified as the Belgæ mentioned by Cæsar as inhabiting the southern parts of the island.

After some remarks from Mr. Wesley, Mr. Blake briefly replied.

Mr. A. ERNST, *On the Anthropology of Caracas*. It was here re-

marked that it was difficult to give information concerning the number of inhabitants belonging to the mixed races, as all were "Ciudadanos", and the law did not recognise a difference of race. A difference, however, existed in society, and it would perhaps never completely disappear. There were all shades of colour, from the deepest black to the almost perfect white, so that colour was not a good criterion. There was more security in the hair, the tint of the nails, and the colour of the male sexual organs. The son of a white father and a Negro mother was called "mulatto", while the son of a similar father and an Indian mother was termed "zambo". When a man of mixed blood married a woman darker than himself, and his children thereby became further removed from the white tint, it was said to be *un salto atras* (a leap backwards). The mixed races were virtually the ruling part of the population, and no doubt would be for a long time.

Dr. SHORTT, *On the Habits and Manners of the Marwar Tribes of India*. The dress and mode of piercing the ear-lobes among the women, and the ceremony of installing the present rane in the zemindary, were particularly dwelt upon.

Dr. E. B. BOGG, *On the Manners and Customs of the Fishing Indians of Vancouver's Island, chiefly as typified by the Sougish Tribe*.—The writer observed that the Sougish tribe, at once the smallest and most degraded, dwelt in and around Victoria, the capital of the island. Amongst other things, the language of the people was adverted to, the doctor describing it as a collection of K's and Q's, gurgled in the throat in a manner that would lead uninitiated persons to suppose that the speaker was about to vomit. Yet to that strange language they could give so peculiar an utterance, as to be heard for several miles through the silent forests. Her Majesty's ship *Devastation* went to the west coast to seize some Indians who had murdered an agent, and it was subsequently ascertained that the exact hour of its departure from Victoria and its destination were known to all the west coast tribes within four hours of the weighing of the anchor. The intelligence must have been communicated through the forest, from one tribe to another, as the distance was much too great for any other mode to have been adopted.

Dr. HUNT approved of the manner in which the paper had been written; the writer appeared to have observed closely and written down carefully what he had seen. There were one or two points about it which seemed so extraordinary, however, that he had great difficulty in believing them: such as the statement that the medicine man, on initiation, ate a dog alive. He should have been happy to hear how this had been accomplished.

Mr. GROOM NAPIER called attention to the statement that the Indians are able to make themselves heard at a distance of seven miles; it is usually believed that the human voice is not audible at a greater distance than one mile.

Rev. W. T. MARSH alluded to the statement that the swathing of their limbs increased their litheness, a result which could not have been expected. He should be glad to hear whether any gentleman



present could speak from his own observation, whether such a result was met with in other tribes.

Mr. TYLOR considered the paper a valuable communication, and the information which it contained of much importance. The statements which it contained coincide very much with what others have said, though in some points the writer may have been misinformed. The loose-headed spear spoken of is found also in other parts of the world: on the eastern coast of Africa, in the Eastern Archipelago, and on the coasts of the whole of North America. The flotation which in other instances is only the loose shaft of the spear, in the present case is much increased by the addition of a seal-skin blown out. The fish-hook mentioned was an extraordinary contrivance, quite new to the description of savage fish-hooks. The ceremony of scalping represented in play among these Indians, is common in reality on the opposite side of the Rocky Mountains. It is curious if it is a relic of what was formerly done in earnest. The writer mentions a game of odds and evens; it is curious to observe how common games of this sort are all over the world, in some tribes they reach a high degree of complexity. The statement that a dog was eaten alive is open to question; but there can be no doubt that when the medicine man reappears he makes a rush at the warrior nearest to him and endeavours to bite a piece out of his arm. With regard to the statement that the voice is heard at a distance of seven miles, it sounds at first as if there had been some misapprehension. The language is the most unlikely of all in the world to be heard at a great distance. Experience shows that, at a distance, the consonants of a word are lost before the vowels, and that ultimately only the vowels are heard. The language of these Indians is made up almost entirely of consonants.

Dr. HUNT referred to an instance mentioned by Captain Parry, where the human voice was heard at a distance of seven miles under the peculiar atmospheric conditions of the Arctic Circle, and thought that similar conditions may exist in the case mentioned by Dr. Bopp.

Mr. DAVID MORRIS thought that the human voice might, after practice, be made audible at a great distance, and mentioned as an instance of the effect of practice in overcoming obstacles in making the voice audible, that in cotton mills, where the machinery entirely drowns the voice of inexperienced persons, he was able to make himself heard, by modifying his voice, at a distance of many yards. He was acquainted with a gentleman who was ordinarily almost stone deaf, who, when travelling by railway through a tunnel, could hear the lowest whisper. He had no difficulty in believing the writer's statement.

Mr. TYLOR said that in India some of the Pariah tribes, through force of circumstances, have acquired the power of making themselves heard at great distances. He could quite credit the correctness of the statement made by the author.

Dr. GRIERSON gave an account *On Certain Celts from Dumfriesshire*. One class consisted of perforated stones found in the locality, and many are hung up in byres and stables as a charm against witchcraft.

Another class was composed of stones not to be found in the district, and in some instances he believed not in the British Isles. The character and workmanship of these were very superior to the former. He concluded, therefore, that the two classes belonged to different races and periods.

Dr. HUNT doubted whether the celts differed from those found throughout Scandinavia. Danish investigators fixed the limits of the stone age as at least 5,000 years ago.

Mr. BLAKE said there evidently existed in early times modes of diffusion of stone from one place to another, for in Belgium 30,000 flint flakes and nuclei were found at the Trou de Chaleux, which must have been brought thirty miles, and pieces of felspar which must have been carried 180 miles.

The CHAIRMAN (Mr. Wallace) thought it was not surprising to find stones not indigenous to the locality, for savage tribes at the present day thought nothing of travelling several hundred miles to procure articles which they wanted.

Prof. LEITNER contributed *Some Papers from Lahore*.

Dr. E. P. HOUGHTON *On the Dyaks of Borneo*.

Mr. WALLACE said that although there was nothing new in the paper, there were many points worthy of discussion. As the author had had such a good opportunity of observing the fluctuation in the population, it was a pity he had not made more use of it. His own observation led him to believe that it was nearly stationary. There is such an abundance of food that little exertion is required to obtain as much as is required for sustenance; the population being small and almost stationary, there is little or no pressure on the means of subsistence, and so the chief stimulus to exertion is wanting. He believed that the small number of children born is probably owing to the hard work which the women have to go through, as in other savage tribes. Should the men be induced to relieve the women of their toil, and thus render the women more able to bear children, the best results may be expected.

Dr. HUNT knew that the author was most willing to do everything he could in the cause of science, particularly of anthropology; and he was sure that the matter had only to be properly brought before him for his attention to be given to it. With regard to the smallness of the families, it was the same with all tribes low in the scale of civilisation. In Europe we have an instance in the case of the Lapps. The average increase of population among the Norwegians is wonderfully small. The author had said that the Dyaks have a very vague idea of a future life; it has often been stated that all nations, however low they may be, have an idea of that state, but this has been well shewn to be incorrect by the Rev. Mr. Farrar.

Dr. GRIERSON cautioned the audience not to follow the last speaker.

Sir J. LUBBOCK fully agreed with Dr. Hunt. Even missionaries, who might not be expected to say so, stated that they were acquainted with tribes having no idea of a future state. With regard to the social condition of the Dyaks, he thought that we are too apt to fall into the error of the Greeks and Romans in calling other races barba-

rians because they differed from us. The truth is they have been forced into a different stage of civilisation, and many of them, the South Sea Islanders for instance, have made the most of their opportunities.

Mr. TYLOR said the paper had led to the discussion of a very interesting question which might be divided into two parts: 1. The belief in a future state; 2. The belief in the existence of a Superior Being. The usual belief among savage tribes is, that when a man dies his soul goes to another place. This is shewn in the custom of burying things with the dead, that their souls may go to be with that of the departed. It has frequently been found that races who were supposed not to believe in a future state or the existence of a Superior Being were possessed of an abstruse mythology. He believed that the way to state the case properly is to say, "formerly it was believed that many races had no knowledge of a future state or the existence of a Superior Being, but that the number of such has been reduced."

Mr. CARTER BLAKE thought that in discussing the subject, it was advisable to have a clear idea of what was meant when the term "religion" was used.

Dr. R. S. CHARNOCK said that we need not go to the ends of the earth to find people who do not believe in a future state. He knew many in England, "savages" he supposed, who did not.

Mr. WALLACE. The question of population resolves itself into two parts: 1. What is the number of children born? 2. What is the number who grow up? He thought it important to make this distinction, as he believed the rate of mortality among children was very high. Over-work has probably a great deal to do with the small number of children born; it has been found that Malay women, who are better treated, have a larger number of children.

In discussing the question of religion, care should be taken against considering the belief of the whole tribe to be the same as that of a single individual member of it. His own opinion was that tribes do exist who have no idea of anything beyond the grave. Sir S. Baker related his conversation with a Latuka chief, who argued that when a man dies there is an end of him. He, Mr. Wallace, was of opinion that all races believe in the existence of unseen things.

Dr. PAUL BROCA *On the Anthropology of Lower Brittany*.—Contended that there were two races in France, one tall, the other short, the line of separation corresponding to that which in the time of Cæsar divided Celtic from Belgic Gaul. The inhabitants of the cantons of the latter were short in stature, and of a type corresponding to the Cornish.

Mr. SEBASTIAN EVANS agreed with M. Broca in believing that the sea air had nothing to do with modifying the physique of dwellers on the coast, but thought that hardly sufficient importance had been assigned to the influence of a military sea-faring life on the stature of a people. At all events, if it could not be conclusively proved that the two circumstances were related, it was remarkable that the Bas-Bretons were taller than their neighbours though closely allied in

kindred, and that the Bas-Bretons were descendants of the Veneti, who had lived by piracy and buccaneering for centuries before the time of Cæsar. Going northward again the same phenomenon recurred. As soon as the traveller came to those parts of France to which the Norman invasion had penetrated, a distinct increase in stature was perceptible. The Normans when they marched under Rollo to occupy the fair fields of Neustria, were the biggest of limb and strongest of thew of any nation on the face of the earth. They were the lineal descendants of the Vikings—those terrible Scandinavian sea-rovers who more than any other race had made their home upon the ocean. On the deck of the Norse pirate-ship, the strong arm, the keen eye, the stout heart, were indispensable requisites of the sailor. All the puny, ricketty, cowardly individuals got killed off, and they who survived to perpetuate the race were the strongest of muscle and longest of limb. This process had been going on for a thousand years before Rollo marched southward. Nor should it be forgotten that these old rovers visited every shore of the known world, and carried off from thence the fairest and tallest of the daughters of the land to be the mothers of their children. Sea air in itself might have no influence on race characteristics, but a thousand years of piratical national life, and a constant influx of fresh blood could not fail to affect materially the physique of a people.

Professor HUXLEY protested against this application of the principle of natural selection. He had lived long on board ship, and believed that to those who had to pass their lives in a low-roofed cabin it would be an advantage to be short rather than tall. Maritime people are not always tall, as, for instance, the Basque race in Europe and the Malays in Asia, the latter of whom average only 5 ft. 3 ins. in height.

Mr. EVANS explained that the Scandinavian sailors would hardly have been inconvenienced in the same way as Mr. Huxley, inasmuch as they had no cabins at all, and that the maritime nation referred to by the Professor were commercial rather than military, or if military fighting under different conditions to the Norsemen, which would account for the difference in the result.

Mr. MOGGRIDGE instanced the Dutch as being anything but tall; they are in fact short, round, and dumpy.

Mr. FLOWER: Harold of Norway was unable to ride on any horse, his legs were so very long.

Mr. WALLACE did not see that the subject under discussion afforded any evidence in favour of the doctrine of natural selection.

Rev. F. W. FARRAR, in reference to the stature of the people of Brittany, drew attention to the statement that the flower of the French nation had been slain during the wars of Napoleon. He thought that perhaps the fact that boys of eighteen were then pressed into the army, and had to go through great privations, would in some measure at least account for the short stature of modern Frenchmen.

Professor HUXLEY on *Two Extreme Forms of Human Crania*.—The crania exhibited were:—1st. The skull of an adult Tartar, from the

museum of the Royal College of Surgeons of London, the most brachycephalic he had ever seen, the breadth in comparison with the length presenting the extraordinary proportions of 977 to 1,000. This skull was orthognathic. 2nd. An instance of extreme dolichocephaly which was said to have come from New Zealand, but of this he was doubtful, as in some particulars it possessed characters of the Australian type; but for the purpose of his communication it was of no moment where it came from. It presented the extraordinary proportions of 629 of breadth to 1,000 of length. Prognathism in this skull was very decided. The roof of the first was arched and dome-like, and the contour was almost semicircular, while that of the second was compressed at the sides similar to the roof of a house. Although the difference in general contour was in these skulls so great, the cranial axis of the one was the same length as that of the other, a fact which showed that length of the cranial axis has no absolute relation to the absolute length or breadth of the skull. The angle of the sphenoid bone has been said to give the character of the face—the more bent the sphenoid bone, that is to say, the smaller the sphenoid angle, the more perpendicular is the position of the teeth; the larger the sphenoid angle the greater the obliquity of the incisors by the enlargement of the facial bones. But in these two skulls Professor Huxley was of opinion that the sphenoid angle was the same, so that this point might be eliminated from the discussion as unimportant. But the moment the outline of the one was superposed upon the other it was apparent that although these important portions of the skull were the same in both, the parts adjoining were arranged so differently as to entirely alter the general outline. The plane of the occipital foramen was much more horizontal in the New Zealand (?) skull than in the Tartar. If the plane of the occipital foramen of the former were the same as that of the latter the degree of prognathism would be much greater, were the plane of the occipital foramen of the Tartar skull the same as that of the New Zealand (?) skull the orthognathism would be so great that the brow would overhang the face. These various points, the similarity of the sphenoid angle and the difference in the plane of the occipital foramen shew the importance of making a section through crania previous to expressing an opinion on them. The next point on which these skulls throw light was the effect which synostosis of the sutures was supposed to have in altering the form of the skull. Virchow pointed out that if the sutures become closed in early life the skull does not expand in the direction at right angles to the suture. If the sutures remain open while the brain is growing, synostosis at a later period is of no consequence as it does not alter the shape of the skull. Those who have worked at the subject finding a synostosis have argued back without thinking of this. The importance of attending to the time at which synostosis took place was exemplified in one of the skulls exhibited, that of the Tartar. Complete synostosis along the sagittal suture had taken place probably at an early period of life, as the others were all open, and yet the breadth in comparison to the length was in that skull unusually great. The brow was so full as to hide the jugal arches from a vertical view,

although the face bones were of full size. While in the other skull in which no synostosis had taken place the head was unusually long, the brow narrow, and the cheek-bones, though not large, were visible from above. The points to which he particularly wished to call attention were:—I. Early synostosis may order without alteration in the shape of the cranium. II. Extreme forms of the skull may be produced without synostosis. III. A correct idea of the relative proportions of a skull cannot be obtained without first of all making a section through it.

Mr. WM. TURNER said that he had two skulls in his possession which would bear out the peculiarities of those exhibited. One of them, that of a Bohemian, was remarkably brachycephalic, though the sagittal suture was obliterated. This was all the more remarkable because it was the skull of a young person not more than twenty-one years old—an age when that suture is usually open. The other from Lincolnshire was remarkably elongated, with all the sutures open. This independent evidence confirmed the opinions put forth by Professor Huxley. The subject of synostosis and the effects resulting from it should be carefully reconsidered.

Mr. SEBASTIAN EVANS wished to know whether there were any marks of external artificial compression visible in either of the skulls exhibited.

Professor HUXLEY: No, none at all.

Mr. CARTER BLAKE said that it could not be denied that Professor Huxley had laid before them two skulls which offered peculiarities, so far as he knew himself, unexampled. The one—that which Professor Huxley had referred to as possessing an index of '62—he considered to belong to the same type of skulls as those which Dr. Barnard Davis had described for the Caroline Islands. It might certainly, on the other hand, be Australian, for the characters of the race skull of that continent were not well fixed. Certainly, it disagreed from the skulls of such typical “tectocephalic” skulls, as those figured by Ecker, and also with those of a more flattened type, which Professor Huxley had himself compared with river bed skulls. It accorded both in the character of extreme length and extreme narrowness with the skulls of the Caroline Islanders. As for the other skull, whose index was '97, Mr. Blake thought it not one of those cases which could be cited as an example of the fair normal skull, for there was a depression along the lambdoid suture which he thought was due to vertical *déprimé par derrière*; there was a distinct depression along the posterior part of the sagittal suture, which had a tendency to produce a *bilobation transverse*, similar in kind, though less in degree than that exhibited in the skulls from *Sacrificios*. Then there was also evidence of a constricting force having operated around the line of the coronal suture, which force had in part produced a tendency towards the *tête annulaire* of Foville. These abnormal causes had rendered equable expansion of the skull impossible, and the result was a tendency shown around the alispheroid sutures to enlarge in a transverse direction to the longitudinal axis of the skull. With regard to Virchow's law, Professor Huxley and Mr. Turner seemed to have two specimens which contradicted it, if applied exactly; yet hundreds

of specimens might be shown on the other side. He, however, admitted that the facts laid on the table by Professor Huxley were amongst the most interesting which had been discovered for many years.

Dr. BARNARD DAVIS said, in reference to Professor Huxley's opinion, that if synostosis of the parietals occasioned dolichocephalism in one case, it must necessarily do so in all cases, he could assure him that this was altogether a mistake; it was neither a universal, nor even the usual result. He had in his collection about thirty skulls in which the sagittal suture is ossified, and not so many as one-third of these have been elongated, or otherwise deformed. Indeed, the shortest skull in the entire collection, that of a Pokomame from Guatemala—shorter than even the Tartar exhibited—has an entire obliteration of the sagittal suture. This skull has been artificially compressed. Hence it is plain no such absolute law exists as that propounded, and other elements must enter into the condition where dolichocephalism is the result of synostosis.

Professor HUXLEY, in reply, said that he was glad to have elicited the fact that synostosis may occur early in life without producing alteration in the shape of the skull. He believed it was not possible to say at what period synostosis had taken place, when it was observed in the cranium of a full-grown person. It was, therefore, not possible to say whether peculiarities observed in a skull with any of the sutures ossified belonged to the skull itself, the synostosis being merely accidental, or whether they were the result of the closing of the sutures. Mr. Blake said that, in his opinion, the skull said to be that of a New Zealander came in reality from New Caledonia. This opened a question of much importance. He had observed that the Australian *facies* extended over a great part of Polynesia. He considered it impossible to distinguish between an Australian and a New Caledonian skull. Before sitting down, he wished to call particular attention to a new publication being brought out in Germany, entitled *Archives of Anthropology*.

On the proposition of Dr. Hunt, the thanks of the meeting were cordially voted to Professor Huxley, for his important communication.

Dr. JAMES HUNT communicated the result of observations made on cases of *modern Norwegians*. The cranial measurements of the majority of the cases indicated that the form of the skull in the Norwegians is much rounder than had hitherto been supposed. The average height of seventy-eight cases of males was 5 feet 8 inches. The hair in the majority of cases was light brown, and the eyes light blue. The author contended that there was no such thing as a Norse race, the races inhabiting that country differing quite as much, if not more, than any inhabiting this country. The author gave some details of his examination of Swedes and Lapps, and concluded by urging the desirability of not confusing the inhabitants of Norway and Sweden.

Mr. W. BOLLAERT *On Ancient Peruvian Hieroglyphics, including the recently discovered Figured Writing*.

Mr. WALLACE said, that throughout the Valley of the Amazon, wherever granite was found in such a position that it could be marked,

rude sketches of canoes, animals, implements and utensils were cut in it. It is remarkable that they should be cut in granite deep enough to be permanent. It would indeed be odd if all that trouble had been taken if they were not intended as a record.

J. PLANT, Esq., F.G.S., *On Evidences of Pre-historic Man, from Pooles Cavern.*

Dr. FAIRBANK said that the remains referred to in this paper resembled those found in other caverns in the same locality, and are supposed to belong to the late Roman and early Anglo-Saxon periods. A systematic exploration of this cavern will, he hoped, be one of the first undertakings of the recently founded Manchester Branch of the Anthropological Society of London; the result of which will be made known either through the Society's Transactions or at the next meeting of the Association.

Consul T. J. HUTCHINSON, *On the Indians of the Paraná.*

JOHN COLLINSON, Esq., *On the Indians of the Mosquito Territory.*

A. H. W. INGRAM, Esq., *On a State Armlet.*

J. W. FLOWER, Esq., *On a Kjökkenmödding in the Island of Herm.*

Sir EDWARD BELCHER, *On the Stone Weapons and Ornaments of the Esquimaux.*

Dr. MANN, *On the Mental and Moral Characteristics of the Zulu Kaffirs of Natal.*

S. PHILLIPS DAY, Esq., *On the Power of Rearing Children among Savage Tribes.*

Dr. GUSTAVE LAGNEAU, *On the Sarrazins in France.*

Professor TENNANT, *On the Traces of an Irish Lake Dwelling found by Captain L'Estrange.*

J. PRIGG, Esq., junior, *On Flint Implements from Drift of Little Ouse Valley.*

W. BOLLAERT, Esq., and Professor RAIMONDY, *On Ancient Engravings on Stone, Southern Peru.*

C. CARTER BLAKE, Esq., F.G.S., *On a Condylus Tertius.*

J. ANDERSON, Esq., *On Recent Explorations in Chambered Cairns of Caithness.*

C. S. WAKE, *On Antiquity of Man in Relation to Comparative Geology.*

Many papers were read in abstract, as there was neither time for reading them at length nor discussing them. This was especially the case the last day. The uncertainty as to the appointment of a Department rendered many authors of papers unable to send them in until the last moment. These papers will, however, be read before the Anthropological Society, and we need not therefore again revert to them. The interest of the Department was becoming greater every day, and much satisfaction was expressed on all sides at the amount of work done. After a complimentary vote of thanks to the President, moved by Sir John Lubbock and seconded by Dr. James Hunt, the Department was adjourned by Mr. Wallace to Dundee in September 1867.